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December 2005

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Dunn, Barry H. and Etheredge, Matthew, "Key Indicators of Success in Ranching: A Balanced Approach" (2005). *Range Beef Cow Symposium*. 47.

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KEY INDICATORS OF SUCCESS IN RANCHING: A BALANCED APPROACH

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INTRODUCTION

“It is difficult to manage what is not measured.” Demming, 1994

While it has often been recognized that a ranch is greater than the sum of its parts, measuring and reporting the performance of the parts seems to be the common method of measuring the success of a ranch. Depending on the interest of the owner and manager, emphasis may be focused on cattle performance, or range management, or financial performance, or individual or personal accomplishments. Seldom does the discussion of success encompass some overarching measurement. The management tool known as “The Balanced Scorecard,” first developed by Robert S. Kaplan and David P. Norton in the early 1990s (Kaplan and Norton, 1996), has been used successfully in many business applications. Using both lagging and leading indicators, it measures the progress of an organization towards its vision from multiple perspectives. The balanced scorecard is an organized and thoughtful approach which recognizes that the successful achievement of an organization’s vision is dependent on the achievement of multiple goals organized into the components of the organization. Application of a balanced scorecard in a ranch business may help a ranch owner and manager achieve sustainable long-term success.

MEASURING SUCCESS: THE CATTLE

Successful cattle performance is often the subject of coffee shop gossip, sale barn bragging rights, show barn hearsay, scientific inquiry, and industry discussions. In a single conversation between cattlemen, topics can range from the average weaning weight of a group of calves, to the percentage of a group of fed cattle that qualifies for “Certified Angus Beef[®].” Often, a single cattle performance measure is calculated with different formulas, ranked on different scales, or described with terms that have multiple definitions. To correct this, there are four critical criteria for measuring success on a ranch.

1. Every effort should be made to use standardized terms, definitions, methodologies, and protocols and to take measurements accurately.
2. Measurements of interest should be compared to a benchmark that has been created using the same terms, definitions, methodologies, and protocols.
3. Use benchmarks that are from relevant geographical areas and are up to date.
4. Understand that big, more, greater than, or larger isn’t always better.

In an effort to standardize the language of the industry, the National Cattlemen's Association adopted Standardized Performance Analysis (SPA) in 1992 (NCA, 1992). SPA was an effort to develop standardized terminology, definitions, and methodology for the analysis of the production, financial, and economic performance of the cow-calf enterprise. A stocker/feeder SPA was adopted in 1995 (NCA, 1995). SPA terminology has gradually filtered into reports, articles, conversations, textbooks, and the scientific literature. It is critical for individual operators in the cattle industry to put themselves and their production system in context with the industry. To meet that challenge, in terms of terminology, definitions, and methodology, all participants in the cattle industry should strive to speak one language. The National Cattlemen's Beef Association also provides a process for changing terms, definitions, and methodologies if necessary.

In terms of cow-calf production, the first biological measure of productivity to address is weaned weight per cow exposed. This inclusive measure is a summary of genetic potential, all facets reproductive performance, death loss and herd health, and pre-weaning nutrition from milk, pasture and supplement (Field and Taylor, 2004). Dunn et al. (2005) reported an average weaned weight per cow exposed from 185 herds in the Northern Great Plains of 451 pounds. Many argue that with advanced cattle production techniques in breeding and genetics that cattle performance on their individual operations is much higher. Yet a 600 pound weaning weight for calves, with a 85% weaning rate would produce 510 pounds of weaned weight per cow exposed. Pregnancy percent and the percent of calves born in the first 21 days of the calving season are very useful measures of reproductive efficiency. Indicators of herd health are death loss at various stages of production and vet costs per cwt. of weaned calf. Weaning weight is a good indicator of growth rate and milk production. Adjusting weights for age and sex of calf, age of dam, and other factors is necessary for the genetic evaluation of seedstock herds, but is not appropriate for commercial herds.

MEASURING SUCCESS: THE RANGE

“For long-term sustainability, a rancher must carefully match stocking rate with carrying capacity.” Teichert, 2005

Discussions in the range management community and literature often focus on topics like grazing systems, prescribed burning, invasive species, and policy of public lands. But the periodic droughts that ravage our rangelands and ranch businesses are harsh reminders of the unarguable fact that regardless of grazing system, the carrying capacity of a pasture or a ranch is variable, and the stocking rates chosen by the ranch owner or manager need to be. This makes a ranch manager's job difficult, but not impossible. The use of yearlings as a stocking rate flux, is one option being used by successful ranchers across the Great Plains. Generally, these operations are choosing to run between $\frac{1}{4}$ and $\frac{1}{3}$ of their carrying capacity as yearlings, which gives them the flexibility to rapidly de-stock in time of drought or extreme weather.

“A combination of grazing capacity, utilization, ecological condition, and trend information is needed for sound range management decisions.” Holecheck, et al, 2004

So what are the measures of successful range management? While it is easy to answer the question with the standard “It depends what your goals are,” generally they would have to include an improvement in range condition, wildlife populations, and cattle performance. These can be measured objectively with well established techniques and skills. They can be taken by a rancher, employees, can be affordably contracted for with range professionals, or these services may be provided by USDA-NRCS. It requires that a base line of information is established and planned monitoring conducted.

MEASURING SUCCESS: THE BUSINESS

“Assessments of the costs of production are the most neglected area in many commercial cow-calf operations.” Field and Taylor, 2004

In a free market economy, people, with their education, experience, time, energy, and money, in the form of investment and re-investment, will flow to where the returns are the highest. As a result, for the long-term sustainability of any business, financial success is not optional, it is required. People have argued and chided that “profitable ranching” is an oxymoron. While it is difficult and challenging, it is an achievable goal. Dunn et al. (2005) identified 16% of the 148 cow-calf operations they surveyed had a Return on Assets (ROA) of greater than 12.9%. In any business, those would be very healthy returns. If success is defined as profit, then the recommended measurements for a business are (FFSC, 1997): 1. Rate of Return on Assets, 2). Rate of Return on Equity, 3). Operating Profit Margin, and 4). Net Farm Income.

Rate of Return on Assets, which can also be referred to as Return on Assets, is an extremely useful measure. It measures the percentage return, regardless of source, to each dollar invested in the operation. ROA measures how efficiently the production system was at taking invested dollars, regardless of source, and turning them into Net Income. It can be used to compare performance of a business, or a group of businesses, to other businesses. Its simple calculation is (FFSC, 1997):

$$\text{Return on Assets} = \frac{\text{Net Income} + \text{Interest} - \text{Owner Withdrawals}}{\text{Ave. Total Assets}}$$

Rate of Return on Equity, or simply Return on Equity, measures how efficient the production system, that has been adopted by management, is at taking the dollars of owner equity invested in the business and producing a return. Its formula for calculation is (FFSC, 1997):

$$\text{Return on Equity} = \frac{\text{Net Income} - \text{Owner Withdrawals}}{\text{Ave. Total Equity}}$$

While cattlemen seldom discuss Operating Profit Margin, it is also a very good measure of financial performance and useful in calculating business competitiveness. It measures profitability in terms of return per dollar of gross revenue. On a cwt. of calf basis, if the net income on a set of calves is \$50/cwt. and the gross income was \$125/cwt., then the

Operating Profit Margin is 0.40. This would be extremely competitive in any commodity business. The simple formula for calculating Operating Profit margin is (FFSC, 1997):

$$\text{Operating Profit Margin} = \frac{\text{Net Income} + \text{Interest} - \text{Owner Withdrawals}}{\text{Gross Revenue}}$$

Net Farm Income, or simply Net Income, is the result of matching revenues with the expenses incurred to create those revenues, plus the gain or loss on the sale of farm capital assets. It is the return to the rancher for unpaid labor, management, and owner equity. It is not a measure of efficiency. It can be expressed as a total, or on a unit basis. Its formula is (FFSC, 1997):

$$\text{Net Income} = (\text{Gross Income} + \text{Gain or Loss on Capital Assets}) - \text{Total Expenses}$$

Discussions about financial success in ranching often include measures of liquidity, solvency, and cash flow. While important, they are not measures of profitability.

“To get insight into the drivers of your economic engine, search for the one denominator that has the greatest impact.” Collins, 2001

What is the one denominator in cow-calf production that meets the above “Good to Great” challenge? The choices would seem to be per cow, per acre, or per cwt. of weaned calf. Certain production measures are naturally measured more appropriately with one over the others. Reproductive performance is naturally measured on a per cow basis. SPA differentiates the definition of a “cow” depending on whether a production measure or a financial or economic measure is being considered. For production measures, the denominator is the number of exposed females. For financial and economic analysis, it is the number of beginning year breeding females. While ranches and cow-calf production units are commonly evaluated for sale and purchase on a per acre basis, large geographical differences in precipitation and production make this a very difficult measure to use when comparing production and financial measures across region. Per cwt. of weaned calf would seem to be the most inclusive, as it combines reproductive as well as growth characteristics of a production unit. When SPA measures from 148 herds were evaluated with all three denominators, Dunn et al. (2005) reported that the most sensitive measure of statistical differences was on a per cwt. of weaned calf basis. It is also how the marketplace values the primary products of a cow-calf production system.

“The single most important measure on a ranch is its breakeven cost on a cwt weight of weaned calf.” Kleberg, 2005

A recommendation of the most important measure for a cow-calf enterprise has been the subject of debate for decades. Johnson (1930) studied sixty ranches in Montana, Wyoming, and both Dakotas during the 1920s. Among his conclusions were that the average 60% weaning percent on the ranches was too low for long term sustainability and suggested that weaning percent was a critical measure for success in ranching. Oppenheimer (1961) agreed and concluded that weaning percent is the best criterion of the efficiency of the

operation. More recently, weaning weight has been the most widely discussed benchmark indicator of success. Having served as Vice President and General Manager of King Ranch for more than a quarter of a century, Stephen “Tio” Kleberg has had extensive experience in ranch management. Kleberg argues that the most inclusive number to measure is total pounds weaned, not average weaning weight (Kleberg, 2005). He advocates that total pounds weaned be the denominator in a calculation of a breakeven. The calculation of a breakeven on a cwt. basis combines the cumulative reproduction, herd health and death loss, and milk production and growth characteristics of the production system with the financial cost of generating that production. Using SPA guidelines, a financial breakeven calculated on a cwt. basis is defined as (NCA, 1992):

$$\text{Breakeven} = \frac{\{(\text{Total operating costs} + \text{Interest}) - \text{Non-calf Revenue}\} \text{ per beginning year cow}}{\text{Lbs of weaned calf per beginning year cow}} \quad \times 100$$

This measure can always be compared to the most current, relevant, and readily accessible benchmark available to cattlemen, the marketplace.

MEASURING SUCCESS: THE CUSTOMER

“Ranchers need to know who their customer is and they need to know if they are satisfying their customer’s needs.” Monfort, 1983

Commodity agricultural production does not lend itself to knowing who your customer is, let alone if your commodity has met the needs of the customer. The multiple layers between the ultimate consumer and the producer are usually untraceable. Many times, markets are based on anonymity, which allows for the diffusion of risk, and to varying degrees, market advantages. While a kernel of corn is a kernel of corn, all cattle are not created equally. There are large differences in the genetics and management systems with which cattle are produced that impact their value in the market place. Ultimately this knowledge expresses itself in market premiums and discounts. One can argue that the cattle industry has been on a slow, steady move away from strictly a commodity business to a more sophisticated and differentiated market system. As all segments have consolidated, information on the value of cattle has transferred to the sellers as premiums and discounts. Consolidation has also removed some of the anonymity of the market place and allowed for more direct communication between buyers and sellers. While retained ownership is one way of getting closer to ones ultimate customer, marketing alliances also allows for information to be passed up and down the value chain of the marketplace. As the marketplace of the cattle industry continues to evolve and mature, Ken Monfort’s 1983 challenge to ranchers only becomes more relevant and important.

MEASURING SUCCESS: THE PEOPLE

“The ability of a company to build its “intangible assets” or “intellectual capital has become a critical success factor in creating and sustaining competitive advantage.” Itami, 1987

While cattle, the land, and the business are the foundational parts of a ranching operation, it must be remembered that they serve the people who own, manage, and operate the ranch. The issues of quality of life and standard of living on contemporary ranches, when compared and contrasted to alternatives, is of great concern to families involved in the ranching business. In the 21st Century, the mantra, “The pay is poor but it’s a great way of life” will no longer be a successful business strategy for coping with issues concerning family members and employees.

While people may be willing to sacrifice some degree of quality of life and standard of living, employee surveys of businesses across America indicate that they also need to feel valued as contributors to the success of the operation. This can be accomplished in several ways. Providing employees with opportunities for learning and growth represents an investment that can have many valuable results. Some can be anticipated, many will not be. Ranch owners and managers must first value education and see it for its intrinsic value to people and society. The creation of an atmosphere in a business that values individual education and growth has great potential to improve employee moral and performance. In ranching today, there are many excellent opportunities for education, including short courses, seminars, schools, and field trips on a wide range of topics including animal handling and behavior, range and pasture management, marketing, and business, and livestock production. Community colleges offer courses in business. Web based courses are available on many topics from colleges and universities across the country. And many programs at national meetings and symposiums are broadcast on the web in real time. Some are taped and are available to view at a time convenient for the viewer.

Measuring success of the people side of ranching is challenging. Employee turnover rates, general family relations, and the number of applications for full or part time jobs are good indicators if in general, a ranch is a good place to work.

MEASURING SUCCESS: A BALANCED SCORECARD

“The concept was created as a pioneering business performance measurement system.”
Kaplan and Norton, 1996

Five perspectives on success on a ranch have been discussed. Each has many individual measures of success. All are legitimate. All are important. How should one organize, weight and value so many different measures from so many perspectives without over emphasizing some and under emphasizing others? Are financial measures more important than range management measures? Do the customers needs supersede the ranchers? These were the questions addressed by Robert Kaplan and David Norton in their seminal work which they referred to as the development of “A Balanced Scorecard” for measuring performance and success in business (Kaplin and Norton, 1996). Based on research conducted at the Harvard School of Business in the early 1990’s, their concepts have been widely reviewed, critiqued, evaluated, discussed, and applied in education, research, government, and business.

“...existing performance measurement approaches, primarily relying on financial accounting measures, were becoming obsolete.” Kaplan and Norton, 1996

A balanced scorecard is an organized, systematic, and very concise way of measuring a business or organizations progress towards its vision and mission. According to Kaplan and Norton (1996) businesses using the Balanced Scorecard accomplish critical management processes to:

1. Clarify and translate vision and strategy
2. Communicate and link strategic objectives and measures
3. Plan, set targets, and align strategic initiatives
4. Enhance strategic feed back and learning

A Balanced Scorecard is a simple matrix that is designed to translate a business's vision and mission into a set of performance metrics. The key elements are (Smith, 2004):

1. Perspectives from which progress and success are measured. These should be limited in number, for example 4-7, not 10 or more.
2. Performance metrics tied to key strategies that are designed to accomplish specific goals. There should be 3-12 per perspective, not 20 or more.
3. Both leading and lagging indicators.
4. Perspectives are organized from bottom to top in order that they build upon each other toward the overall accomplishment of the organizations vision and mission.

An example of a Balanced Scorecard for a ranch is in Figure 1. The key elements are met. Its five perspectives are learning and growth, natural resources, cattle, customer, financial, and people. There are 3-8 metrics to measure and monitor per perspective. There are both leading and lagging indicators. The perspectives build upon each other. For example; a very simple synopsis of the assumptions of the example Balanced Scorecard in Figure 1 is that learning and growth opportunities for employees translates into improved range and cattle management. If range and cattle performance is enhanced and the buyers of the ranches cattle are more satisfied, it will all translate into improved financial performance of the business. Ultimately they all add up to greater satisfaction of owners, managers and employees.

“We have plenty of measurements of the past. But we can't change the past. What we need are measurements that predict the future that we can react to.” Genho, 2004

Identifying leading versus lagging indicators is a critical step to take when building and using a Balanced Scorecard (Kaplin and Norton, 1996). Lagging indicators measure past performance. Leading indicators are predictive of future performance. Some measures can do both. The importance of leading indicators is that they provide an opportunity for intervention if necessary. Examples of leading and lagging indicators for the topics discussed follows.

Range: Range condition is an example of a measure that is both a leading and lagging indicator. While range condition, or seral stage, estimates the current plant community with respect to a potential, and is a result of past management decisions, it is also an excellent predictor of future production. If range condition has not met goals, stocking rates can be reduced in the future to help drive change. A photo point of an example of gully erosion would be an example of a lagging indicator. The damage is done. The water is gone. The soil has eroded. Counts of mature grouse in the spring of the year would be a leading indicator of the future grouse population based on average reproductive rates.

Cattle Production: Body Condition Scores (BCS) of dry pregnant cows is an example of a leading indicator. Research from stations across the United States and from many diverse environments has shown that BCS is an indicator of future reproductive performance. This can be extrapolated into a prediction of total pounds weaned and gross income. If BCS is low after weaning, nutritional supplements can be fed to improve BCS before calving. Total pounds weaned is a lagging indicator. It is a cumulative measure of past reproductive performance of the cow herd, herd health and death loss, milk production of the cows, and growth rate. Pregnancy percentage is both a lagging and leading indicator. It measures past reproductive performance during the breeding season, and also can be a predictor of total pounds weaned for the up-coming production year.

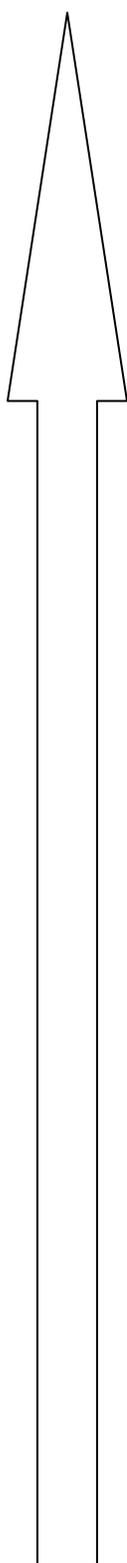
Customer: Inquiries from potential buyer of cattle would be an example of a leading indicator with regards to how customers view a rancher's cattle. Reports on how a rancher's cattle performed for past buyers would be considered lagging indicators.

Financial: Many business measurements are lagging indicators. ROA is an excellent example of a lagging indicator. The net income has been generated and the investment in assets made. To some degree, liquidity measures, like current ratio and working capital, may be used to predict the future. Strong positions in these areas allows for different management choices compared to if these measures were evaluated as weak. Performance of commodities on the Board of Trade and the Mercantile Exchange would also be leading indicators.

People: Employee turnover is a lagging indicator. While measures of job satisfaction may be hard to acquire, they would be an example of a leading indicator.

CONCLUSION

The use of a Balanced Scorecard could positively impact a rancher's ability to manage his/her ranching operation. It is designed to succinctly measure the success of critical strategies that build towards the successful accomplishment of a rancher's overarching goals, mission and vision. The use of leading as well as lagging indicators allows for the ranch manager to monitor not only the past performance of key performance measures, but also provides opportunity for intervention in areas that can be improved upon. The Balanced Scorecard, while new to ranching, has proven to be an effective management tool in many applications over a relatively long period of time.



Perspectives with Strategic Objectives	Goal	Actual
People 1. Healthy, happy family 2. Sense of security 3. Low stress	Yes Yes Yes	
Financial 1. ROA 2. \$ Net Income 3. Breakeven 4. Current Ratio 5. Long Term Ratio	8% \$200,000 \$0.75 2:1 5:1	
Customer 1. Feedback good 2. Repeat customer 3. Customer inquiry	Yes Yes Yes	
Cattle 1. Lbs Weaned/Cow Exposed 2. Preg % 3. Replacement Rate % 4. Cow BCS at weaning 5. Days fed harvested feed 6. % Calves born in 1 st 21 days 7. \$ Vet/cwt. weaned calf 8. Cattle ID	500 94 15 5+ 85 65 \$0.02 Yes	
Natural Resources 1. Stocking Rate = Carrying Capacity 2. Prescribed burn 3. Residual forage adequate 4. Noxious weeds treated 5. Precip. as a % normal 6. Range Condition Score 7. Photo Pts. Compared 8. Grouse Count	Yes Success Yes Yes 110 Improving Improving Increasing	
Learning and Growth 1. Attend RBCS 2. Attend KRIRM Symposium 3. Participate in Grazing School	Yes Yes Yes	

Figure 1. Example of a Balanced Scorecard for a ranch.

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